USAID/GUATEMALA HURRICANE MITCH SPECIAL OBJECTIVE

Rural Economy Recovers from Mitch and is Less Vulnerable to Disasters

I. Introduction

In the throes of recovering from years of civil war and conflict, Guatemala encountered new short and medium term challenges to the Guatemalan economy when Hurricane Mitch struck in late 1998. Despite an impressive response by Guatemalan emergency agencies which minimized loss of life, the hurricane did tremendous damage to the agriculture sector, which is the primary source of livelihood for the majority of those affected. The Government of Guatemala and the United Nations estimate rehabilitation and reconstruction costs at $550 million.

Mitch dealt a severe blow to Guatemala, causing vast economic and social dislocations, and diverting valuable human and financial resources away from the transition to peace and sustainable development priorities. It is estimated that 1999 exports will drop $365 million, which translates into the loss of jobs for 35,000 people. A successful rehabilitation and reconstruction effort is necessary for Guatemala to recover from the natural calamity and to meet its multiple challenges for the new millennium.

In an immediate response to the Mitch disaster, the U.S. contributed $9.5 million in new funds for emergency relief that included emergency assessments and supplies, food aid, and U.S. Army helicopter support. USAID and the Title II PVOs responded quickly to the need for emergency rations and delivered an additional 645 metric tons of food to support 169,000 people directly affected by the disaster. USAID also began design of a public health package to strengthen the national capacity to: reduce the spread of infectious diseases (cholera, malaria, and dengue), and increase immunization coverage, especially of measles. For rehabilitation and reconstruction, USAID/Guatemala also reprogrammed $2.8 million from on-going activities that included medicines, seeds, and construction materials. U.S. DOD contributed an additional $26 million that included troops, military engineers, medical teams, and aviation support.

The United States will continue to play a key role in Mitch rehabilitation and reconstruction efforts along with other bilateral and international donors. Under this Special Objective, USAID/Guatemala will begin in FY 1999 to help recover sustainable agricultural productivity, improve disease control and community sanitation, and support national and community level disaster preparedness.

II. Background

Damages. Mitch hit hard the south coast, the central and north west river valleys of Polochic and Motagua near Lake Izabal, and the Caribbean coast -- an area the size of El Salvador. While loss of life was minimal due to preventive evacuation of populations most at risk, direct damages to infrastructure, crops, housing, schools and health clinics is estimated at $550 million plus $280

million in foregone revenues from exports and reduced economic growth. The estimates of damage include 268 dead, 106,600 evacuees, and a total of 750,000 people affected. The damage to infrastructure was great, with 53 bridges damaged and 68 destroyed; 90 stretches of road were affected, and 19,332 houses damaged and another 2,293 destroyed. On the productive side, agriculture was hardest hit, with 90,000 hectares of losses in basic grains, coffee, vegetables, and bananas. Fifty major and over 200 minor irrigation systems were also damaged.

Guatemalan Government response. The GOG mobilized its emergency response apparatus, which had already been trained and tested during 1998 with the forest and brush fires of the Spring and small floods in the Summer. They evacuated some 10,000 people before the storm hit and another 25,000 right after. This action saved untold lives. A total of 54,725 people were provided with temporary shelter for several weeks following the storm. The Ministry of Transport working with over 80 private firms cleared the major roads, most of which were reopened within four days. The Ministry of Health took preventive measures to control the spread of endemic disease. These actions, supported by relief teams and helicopters from the U.S. and Mexico as well as technical and financial contributions from other donors, made it possible to move from emergency relief to rehabilitation and reconstruction efforts in about six weeks.

The GOG formulated a 100 day reconstruction effort on November 12 aimed at three objectives: (1) restoring normal living conditions for Mitch victims; (2) repairing damaged infrastructure; and (3) recovering productive capacity. It identified 1,643 priority rehabilitation projects in 12 target areas: food security, health, water/sanitation, housing, schools, replacement textbooks and desks, road repair, electricity, irrigation, land leveling, environmental evaluation and disaster mitigation, and economic recovery/employment generation. The estimated cost is $116.3 million, of which the GOG has spent about $100 million, covering about 66% from its own resources while the international community has provided 33%, mostly in food aid.

Results to date. In recent reports on the status of implementation of the 100 day plan from the reconstruction cabinet, headed by the Vice President, the GOG has achieved so far 95% of the first two objectives. However, full agricultural recovery will take up to two years to complete. Highlights of progress include returning all but 530 of the 54,725 evacuees to their communities; 4,366 families have received housing materials (for floors and roofs); 75% of targeted water systems have been repaired, 26 major bridges repaired and 105 kilometers of primary roads asphalted. In addition, 23 targeted major irrigation systems are now rehabilitated and 40 priority minor irrigation systems repaired. Short-term job creation efforts have produced 275,560 workdays provided under food for work programs (an average 7,000 jobs/day).

The U.S. Government Contribution. For emergency relief, the U.S. contributed $9.5 million as follows: $1.5 million in OFDA emergency assessments and supplies (e.g., plastic sheeting, water jugs) were provided; $4 million in PL 480 Title II initially fed evacuees in shelters and later was used for food for work programs in the most affected areas; $4 million was spent for U.S.Army helicopter support which helped with rescue operations and distribution of emergency relief supplies.

For rehabilitation and reconstruction in support of the GOG's 100 day plan, USAID reprogrammed $780,000 for urgently needed medicines to combat the spread of cholera and other acute diahrreal diseases. Some 35,000 packets of intravenous solution were flown in with OFDA's help to avert a supply shortage in hospitals treating cholera patients just before Christmas. This action saved lives and contributed to preventing the spread of cholera. USAID also reprogrammed $2 million to support the Ministry of Agriculture's efforts to repair small irrigation systems and buy black bean seed to allow farmers to replant their lost crops and help avoid bean shortages later.

The major contribution so far is the approximately $26 million spent by U.S. Armed Forces under drawdown authority to deploy over 1000 troops, military engineers and medical teams, and aviation support. U.S. Air Force and Marine Corps engineers worked for two months on the Pacific coast. They worked on some 35 small infrastructure repair projects, including the repair of 10 bridges, 70 kilometers of road and 4 new water wells. U.S. Navy and Marine medical personnel supported Guatemalan health programs treating thousands of Guatemalans in the affected areas. All of these projects have been completed. The projects were closely coordinated with local authorities who are expected to maintain them.

Interagency Coordination. USAID is one of several USG agencies poised to contribute to the next phase of Mitch reconstruction in Guatemala. USAID/G-CAP will be coordinating with other agencies in support of our special objective for Mitch reconstruction. The U.S. Armed Forces will continue to deploy resources under its ongoing "New Horizons" program, with a particular focus on roads, dikes and levees, schools, and health posts in the Motagua river watershed basin. The U.S. Army Corps of Engineers is doing a water resource study of the Motagua. The U.S. Department of Agriculture will ensure that local currencies generated under the Title I and Section 416b programs contribute to reconstruction of rural roads, irrigation, and soil conservation efforts in the affected areas.

Additional interagency coordination in the area of disaster preparedness and mitigation includes the U.S. Geological Survey (USGS) which plans to support Guatemala's efforts to prepare for and reduce its vulnerability to future disasters through regional cooperation and planning, data collection and data analyses. The Federal Emergency Management Agency (FEMA) proposes to contribute to disaster reduction training, capability assessment for readiness (CAP), and public education. The Peace Corps has targeted monies for Guatemala to assist with community-based disaster preparedness and mitigation activities.

In the area of recovering agricultural productivity in affected areas and watershed management, the USGS plans to support data collection for reconstruction activities, natural resource management, and protection of key watersheds. The U.S. Army Corps of Engineers can assist Guatemala in watershed planning and engineering assistance. The U.S. Department of Agriculture, in addition to Title I and Section 416 resources, plans to provide assistance in the region to help reactivate the agricultural sector through rehabilitation of watersheds, recovery of agriculture production, and reconstruction of systems that protect animal and plant health and food safety. The Overseas Private Investment Corporation (OPIC) is developing a strategic and focused effort to increase U.S. private investment in the region to respond to infrastructure,

housing, agriculture, energy, manufacturing and tourism sector needs. OPIC will seek authority to make equity investments in countries severely damaged by Mitch.

The Centers for Disease Control (CDC) will help develop an effective public health surveillance system in Guatemala.

Other U.S. government agencies involved in the Hurricane Mitch response effort include: the Export Import Bank, which is offering medium-term financing to support increased trade flows in a joint initiative with the Central American Bank for Economic Integration (BCIE); the Inter-American Foundation (IAF), which is designing activities to recover productive capacity involving communities and nongovernmental organizations (NGOs) in rural areas; the Department of State, which will strengthen immigration services information systems under its Anti-Alien Smuggling Project; the Environmental Protection Agency, which has proposed a two-year regional water management project; and the Department of Transportation, which offers aids to navigation systems, port reconstruction studies, and vulnerability reduction of the Central American trade corridor.

Other Donors. The GOG reports approximately $334 millon has been pledged so far by international donors to support Hurricane Mitch relief and reconstruction efforts in Guatemala. Major donors include the Inter-American Development Bank ($112 million), BCIE ($61 million), Japan ($61 million), Spain ($29 million), and The World Bank ($21 million). PAHO is expected to play a key role in support of public health surveillance and immunization throughout the region. The U.N. system and the European Union are also planning reconstruction assistance.

III. Special Objective Problem Statement and Relationship to USAID/Guatemala's Strategic Plan

Guatemala is more than two years into successfully implementing the historic peace accords signed December 29, 1996. Similarly, USAID/Guatemala is midway through its current five-year FY 1997-2001 Strategic Plan which supports both the implementation of the Peace Accords and directly addresses critical development challenges keyed to inclusion, local empowerment, and poverty reduction.

The Special Objective (SpO) for Mitch reconstruction is aimed at: "Rural Economy Recovers From Mitch and is Less Vulnerable to Disaster". The destruction caused by Hurricane Mitch cost the Guatemalan economy 1.5% in growth and complicated Peace Accord implementation. This targeted two-year (mid FY 1999 to mid FY 2001) assistance effort is directed at Guatemala's most affected departments to help recover sustainable agricultural productivity, to improve disease prevention and control programs, and to strengthen national and community level disaster preparedness. The Special Objective provides a strategic focus and a place in our Country Strategy for Mitch reconstruction efforts. It will showcase our additional reconstruction assistance for a limited period and facilitate our discussions with our host country counterparts. It will provide the basis for obligating most if not all supplemental funds, including the Child Survival funds, in one special objective agreement well before the end of the fiscal year.

The SpO is designed to provide maximum support to the Guatemalan government's reconstruction and rehabilitation effort within a relatively short (18-24 month) time frame. Activities will be designed that recognize the short to medium term nature of this effort while contributing to the long term sustainable development objectives of USAID's program in Guatemala. USAID has benefitted in its analysis of the problem by previous analyses conducted by the GOG, the U.S. Army Corps of Engineers, and our local partners, including the Centers for Disease Control.

The Mitch SpO will support, and be supported by, USAID/Guatemala's ongoing programs. A portion of the local currencies generated under the 1999 amendment to the *"Support the Implementation of the Peace Accords"* agreement will support the Ministry of Agriculture's reconstruction and rehabilitation of small farmer irrigation systems, and provide technical assistance for irrigated agriculture, seeds, and soil conservation. USAID's *"Better Health for Rural Women and Children"* strategic objective focuses on improving the access to and quality of basic rural health services including family planning, obstetric care, and the prevention and integrated management of childhood illnesses. The health objective provides targeted assistance to seven Departments of the Zonapaz to help reduce the enormous differentials in maternal child health (MCH) indicators between rural indigenous women and children and the rest of the country. The Mitch SpO will complement the ongoing MCH programs by focusing on different geographic areas of the country and addressing some of their major public health problems. The SpO will focus on the areas of Guatemala that are most vulnerable to natural disasters - the southern coastal lowlands, the Ixcan and communities along the Polochic, Motagua and Chixoy river basins. Finally, USAID's *"Increased Rural Income and Food Security"* strategic objective directly supports the Mitch SpO by utilizing the same types of sustainable agriculture income generation interventions. The Mitch SpO expands the types of activities being funded under the Income SO using the same partners. These activities are designed to increase small farmer incomes while enhancing natural resource management practices which should help mitigate future climatic challenges.

IV. Description of the Strategic Objective and Results Framework

The Special Objective focuses on helping Guatemala's rural economy recover from the devastation brought on by hurricane Mitch while offering technical support and assistance to help the rural economy both mitigate effects of the disaster and better prepare for future disasters. As a result, the SpO will help the rural economy become less vulnerable to disaster. Three intermediate results (IR) are anticipated that will contribute directly to the special objective: IR1 -- Disaster Preparedness Enhanced; IR2 -- Agriculture Productivity Recovered on a More Sustainable Basis; and IR3 -- Improved Community Disease Prevention and Control Programs.

- **IR1 Disaster Preparedness Enhanced**

  Activities under this IR will be focussed on supporting the Guatemalan Government's plans to strengthen its disaster preparedness. The lessons from Hurricane Mitch pointed

out clear weaknesses in the national network of disaster response, from poor communications between central and local disaster coordination committees to the absence of pre-identified logistical support channels and arrangements. As a result, the disaster response had to be improvised. Fortunately, the private sector responded: the banks lent their national radio communication system and construction companies made equipment available without contracts. The Government now wants to be more systematic in its preparations. It plans to reform and better equip the national disaster coordination committee (CONRED) and strengthen CONRED's network of departmental network committees (DEPRED). The Government also plans to prepare a vulnerability assessment to identify those communities most at risk of natural disasters including floods, volcanic eruptions, and earthquakes. Based on the resulting "vulnerability map" the Government would work to strengthen local emergency committees and develop linkages to CONRED/DEPRED, help them prepare local emergency action plans, provide disaster preparedness training to community residents, identify emergency shelters, stockpile emergency supplies, and identify alternate evacuation routes.

USAID/G-CAP, USAID/OFDA, DOD SouthCom, USGS, FEMA, NOAA, and Peace Corps along with other donors including the Interamerican Development Bank (IDB) and the UNDP plan to provide assistance to the GOG in carrying out these plans. The IDB and UNDP disaster preparedness efforts will focus primarily at the national level. USAID/G-CAP will ensure that its disaster preparedness work at the community level is well coordinated with that of the two donors. USAID/G-CAP is coordinating with USAID/OFDA to provide for technical assistance in disaster training and planning.

Indicators and Targets:

- CONRED communications network extended to 6 high risk departments
- CONRED/DEPRED personnel receive specialized training-of-trainers
- National, departmental (6), and local (30) emergency action plans completed
- 30 community emergency committees participate in small grants program
- River monitoring (6) and meteorological stations (7) restored

IR1.1 Mapping, Data Collection, and Targeting of Most Vulnerable Communities

The Guatemala Government, led by the National Seismological, Volcanological, Meteorological, and Hydrological Institute (INSIVUMEH) plans to take advantage of the regional activities to collect and analyze satellite data from NASA, NOAA, and the USGS. INSIVUMEH's has identified an urgent need to restore six damaged river monitoring and seven meteorological stations, to upgrade disaster communications systems, and to develop a disaster preparedness and geographic vulnerability mapping capability. USAID/Guatemala will help in preparing the vulnerability assessment along with the cooperating U.S. government agencies and producing the vulnerability map and assist with other data analysis and planning needs.

IR1.2 Community Organizations Strengthened

The local voluntary emergency committees that formed quickly in response to the flooding and devastation caused by Mitch need to be better linked to the national disaster coordination network and provided training in disaster preparedness and improved organization. We see our comparative advantage working through our PVO partners active in communities identified in the "vulnerability map" to provide help in strengthening these communities' capacity to plan for and respond to future disasters through their local emergency action committees. Our funds would be used for small grants to PVOs wanting to work with these communities at risk. We will provide training and technical assistance to locally based PVOs and NGOs working to expand their level of expertise. OFDA/FEMA can assist with training of trainers and with materials. We also will include disaster preparedness activities in our PVO grants in support of our other reconstruction activities related to agricultural recovery and disease control and sanitation at the community level.

IR1.3 CONRED Network Strengthened

CONRED has recently undergone a major reorganization and overhaul, naming a new civilian Executive Secretary, Director of Operations, and other key personnel within the past two months. For the first time all of CONRED's administration/financial management and operations will be coordinated by non-military personnel. The new administration is intent on developing Emergency Action Plans (EAPs) at the national, departmental, and local levels with a focus on decentralized decision making and local budgetary control. In addition, CONRED plans to develop a modern operations center with financial support from the IDB loan, drawing heavily from OFDA technical assistance for the center's design, technical equipment, and furnishings. In the short term, and in anticipation of a difficult rainy season beginning in May 1999, CONRED is planning a series of intensive pilot training courses beginning in the departments of San Marcos, Retalhuleu and Izabal. These pilot courses follow the OFDA model and will facilitate development of local level EAPs. CONRED expects to repeat these training courses initially in the six most vulnerable Departments.

USAID/Guatemala will complement the OFDA effort through targeted technical assistance, conference attendance, and training. No supplemental funds will be provided directly by USAID to CONRED although it may receive equipment, technical assistance, and training from other U.S. agencies.

- **IR2 Agricultural Productivity Recovered on More Sustainable Basis**

  The northern and eastern departments of Alta Verapaz, Izabal, Zacapa, Chiquimula, and northern Quiche were severely affected by Hurricane Mitch. In these areas agricultural production potential was destroyed and the livelihood of thousands of already impoverished households threatened. Particularly hard hit were the thousands of small farmers who had highly productive, fertile, and sometimes irrigated parcels on the edges of the Motagua, Polochic, and Chixoy rivers and their tributaries. Most of these irrigation systems were small scale and artisenal in nature. In some cases, the rivers that were the

source of water for these systems have changed course making the irrigation systems completely inoperational.

Although the GOG repaired the bridges and roads relatively fast, the modified course of the rivers leaves this infrastructure unprotected from future, even minor, floods. In some cases fertile riverside land was covered with large amounts of infertile sand and rocks. Farmers higher up the slopes in the affected watersheds were adversely affected by landslides and destruction of farm-to-market access roads and trails. Small farmer coffee processing infrastructure was also seriously affected. Most of the black bean seed being produced for the 1999 planting season was lost.

The primary objective of USAID/G-CAP's activities is to help small farmers recover lost agricultural production capacity at the same time making it more sustainable and resistant to future climatic challenges. Small farmer agricultural recovery requires river channel modification and dike/levee repairs; rehabilitation of irrigation systems; land stabilization and reclamation; farm-to-market road rehabilitation; and improved natural resource management practices, such as soil conservation and planting of trees to protect watersheds.

The period from May to August is crucial for the startup or completion of many of these activities. If most activities aren't started during this time period, a whole year's agricultural cycle may be lost. This would be a disaster for the thousands of small farmers that suffered serious losses to their income and food production potential from Mitch.

The coffee harvest begins in October and crucial farm-to-market roads have to be rehabilitated before that time. The period of highest rainfall in the Polochic valley is September to November and river channel modification and dike/levee repairs have to be finished before that time to overcome the severe vulnerability resultant from Mitch. Any reforestation activities need to take place at least two months before the end of the rainy season in December. If not planted by that time, the trees will not survive and cannot be planted again until May or June of the next year.

The absolute highest priority for the Mission are those interventions that facilitate small farmers restoring their agricultural productivity lost due to storm damage caused by Mitch. Therefore, the May through August time frame is crucial. We anticipate working with MAGA and four PVO partners that are prepared to borrow or advance their own scarce resources in order to start activities during this crucial time period if they have assurances that the Mitch supplemental will be passed.

Timing is also crucial from a disaster prevention perspective. River channels choked by sediments during Hurricane Mitch increased the threat of flooding of communities and infrastructure that were affected by that event. Bridges that have been precariously repaired may be destroyed by "normal" events, unless they are strengthened; average run-off may cause flooding due to restricted river channel flow capacity.

The Departments of Alta Verapaz, Izabal, Zacapa, Chiquimula, El Progreso and part of El Quiche (the northern part - Ixcan) is where SpO efforts will be concentrated. These

areas have approximately 16% of the country's population. The most affected areas include 18 municipalities and some 618,500 residents.

* UNDP estimations based on the 1994 National Census

Department	Estimated Population (1996)*
Zacapa	192,648
Izabal	307,352
Alta Verapaz	689,537
Chiquimula	282,933
El Progreso	131,127
Total	1,603,597

The Polochic River watershed spans the three departments of Baja and Alta Verapaz and Izabal. Six municipalities were directly affected by Mitch in an area of nearly 2,896 square kilometers and a population of 27,058. The much longer and wider Motagua River watershed spans the three departments of El Progreso, Zacapa, and Izabal. Eleven municipalities were affected in an area of 13,130 square kilometers and a population of 591,511. Land use in the Polochic and Motagua is as follows:

LAND USE (in hectares)

POLOCHIC	Natural Forest	80,000
	Coffee	12,000
	Corn	4,000
	Cardamom	400
	Rice	400
	Others	1,000
MOTAGUA	Natural Forest	40,000
	Banana	6,500
	Corn	2,000
	Rice	3,100
	Vegetables	5,000
	Others	3,000
Total		59,600

As mentioned before, these areas are important in terms of Guatemala's agricultural production. A large portion of Guatemala's export crops (coffee, bananas, and melons) are concentrated in these departments. The following illustrates the Minister of Agriculture (MAGA) official estimates for crop losses:

Exchange Rate: US$1.00=Q7.00

Department	Has. Damaged	Losses in US$
Zacapa	3,648	10,029,092
Izabal	8,600	94,566,429
Alta Verapaz	3,427	3,114,286
Chiquimula	160	1,980,215
El Progreso	1,424	8,778,193
Total	17,259	118,468,214

Target beneficiaries for the Mitch SpO coincide with the target beneficiaries under USAID/Guatemala's "Increased Rural Household Income and Food Security" strategic objective (Income SO) which are broadly defined as the rural poor, with specific emphasis on women and the indigenous, within selected areas of the country's poorest departments. The poor in these areas generally have limited education, low incomes, poor nutrition, and lack food security; and have limited or no access to commercial credit and other support services for agricultural production or family-owned businesses. However, Income SO activities are not concentrated in Izabal, El Progreso, Zacapa, and Chiquimula which do not have the large indigenous populations that the other SO target areas have.

Income SO activities are focused on the following three specific subsets of the population:

- extremely poor families requiring basic assistance to survive,
- small-scale farmers engaged in production for sale in commercial markets, and
- microenterprises positioned for commercial growth and expansion.

Hurricane Mitch forced many of the rural poor who were in the latter two categories back into the first category. Mitch SpO interventions are intended to enable them to regain their lost productive potential status.

The following are the types of activities that will be supported. The activities are designed to recover lost agricultural production capacity while making it more sustainable and resistant to future climatic challenges.

<u>Indicators and Targets:</u>

- 17,000 small farmers reestablish their productive capability in a more sustainable and disaster resilient fashion,

- 15,000 hectares of land rehabilitated
- 600 hectares of coffee land rehabilitated
- 70% of the country's need for black bean seed met
- 13,000 affected microentrepreneurs receive credit and/or assistance
- 10 foot and 20 transport bridges rehabilitated
- 100 kilometers of road rehabilitated

IR2.1 River, land, and small scale irrigation system rehabilitation

The GOG is in the process of preparing reconstruction plans for the Motagua and Polochic watersheds that will identify key actions necessary to reestablish productive activities and mitigate disasters in the future. The GOG has requested U.S. technical assistance to do a reconnaissance study and two year reconstruction plan for the Motagua River basin. We are contacting USACE to respond to this request. With USGS data, technical assistance from the Army Corp of Engineers, support from U.S. Department of Defense engineering teams, and financing from other donors, the GOG intends to undertake major repairs to river levees and river bank protection structures as part of the Motagua River basin reconstruction plans. These actions will be taken to rehabilitate and protect road, bridge, and irrigation infrastructure. Similar actions will be taken in the Polochic but on a much smaller scale. USAID resources will support planning and implementation for irrigation system rehabilitation, flood control, river alignment, and land reclamation activities associated with these efforts through an agreement with the Ministry of Agriculture in the Polochic and Motagua river valleys.

Previously fertile lands now under water, washed away, or with large amounts of rocks and sand deposited on top of it create landless small farmers in these areas. Funds may be made available to assist these small holders to relocate to productive lands at higher elevations.

IR2.2 Polochic watershed management

In support of the Polochic Watershed Management Plan, USAID in coordination with USDA resources will focus on three different types of activities: (1) reforestation of the steeper slopes and more marginal soils; (2) community based natural resource management and income generation activities; and (3) small farmer coffee improvement.

IR2.2.1 Reforestation

Reforestation activities will be carried out in coordination with the municipalities and the National Forestry Institute (INAB) through CARE. Much of the higher slope and marginal soil land is being given to small farmers who were former plantation workers as settlement for back wages due to them. Helping these small farmers formally title this land coupled with extension services would provide an incentive for them to reforest it or at least engage in sustainable agroforestry activities.

IR2.2.2 Community natural resource management

With support from USAID's "Increased Income and Food Security" Strategic Objective, CARE is currently implementing an integrated sustainable agricultural management activity in a small number of microwatersheds in the Cahabon and Polochic valleys. The CARE activity (called "Milpas") involves strengthening the capacity of community organizations to manage their natural resources, strengthening the abilities of municipal governments and local NGOs in natural resource management, increasing family income and food availability through diversification activities to enable subsistence farmers to engage in higher value commercial production, and promoting greater environmental awareness at the microwatershed level.

This model will be expanded in specific locations within the greater Polochic watershed to begin rehabilitation of the watershed and serve as demonstration of preventative measures that can be taken to reduce landslides in the future. CARE may expand current sub-agreement with local PVOs (i.e., Talita Kumi) to expand coverage to more affected areas.

IR2.2.3 Small Farmer Coffee Improvement

Under USAID's Small Farmer Coffee Improvement Project, the National Coffee Association (ANACAFE) has worked in the Polochic watershed with small coffee farmers for more than eight years, improving productivity and increasing farm incomes. Many of these farmers not only lost portions of their hillside farms to landslides but also their small ecological processing facilities, farm-to-market roads, and the majority of the 1998/99 harvest. ANACAFE will work with the local federation of cooperatives to rehabilitate land, provide technical assistance, and reestablish coffee plantations.

IR2.3 Seed Recovery and Multiplication

White corn and black beans are the staple crop for the poor in Guatemala. Hurricane Mitch caused serious damage for the subsistence farmers that produce these crops in affected areas. It also seriously damaged the seed production generally maintained by the farmer for the next planting season. Improved white seed corn was found in the region quickly, however, because black beans are only produced by small farmers whose seed were washed away by the floods, minimal quantities of seed were available. As part of Mitch response efforts, USAID supported the multiplication of this seed for the up-coming planting season. The Ministry of Agriculture's Science and Technology Institute will work with local and international NGOs who will purchase the seed for distribution to the communities in which they work. In order to maintain black bean seed in stock, ICTA will establish a seed bank and encourage communities to improve post harvest storage and establish local seed banks.

IR2.4 Microenterprise Recovery and Credit

USAID's principal microenterprise partner organization, the Rural Development Bank (BANRURAL), was affected by Hurricane Mitch. Many of their microentreprenuers suffered either directly from the ravages of Mitch or because of the serious economic decline in affected areas which reduced demand for their production or services. The

resources available under the Special Mitch Objective would be used for the Rural Credit Fund owned by the Government of Guatemala and managed by BANRURAL specifically for microenterprise activities in the departments where the damage from Mitch was the greatest: Zacapa, Jalapa, El Progreso, and Izabal. The uses for the funds would include, but not be limited to: a line item for renegotiation of current loans; capitalization of the fund; and training for bank, NGO, and other financial service providers for microenterprise activities (an expansion of a program already in place). The mechanisms have already been discussed with BANRURAL and can be implemented rapidly. USAID estimates BANRURAL will provide assistance and/or credit to at least eight wet coffee mills in the Polochic watershed involving approximately 12,000 individual Ke'chi microentrepreneurs who are owner/operators of the coffee mills. Assistance or credit will be provided to at least another 3,000 microenterprises in the Polochic and Motagua watersheds which vary in size and type of operations. The expansion of BANRURAL's services may include upgrades to their agencies in these areas.

IR2.5 Rural Road Repair in Ixcan, Quiche and Alta Verapaz

USAID's road rehabilitation and maintenance program in Ixcan, Quiche with FONAPAZ is implemented through the Cooperative Housing Foundation (CHF). CHF has identified foot bridges that were washed away when the rivers surged during the storm and vehicle bridges which need significant repair to become fully useable again and protected against future floods. Farm to market roads in the higher coffee producing areas of the Polochic watershed remain closed. These reconstruction activities can be undertaken as part of on-going agreements.

- **IR3 Community Disease Prevention and Control Systems Strengthened**

  In many parts of Guatemala, malaria, dengue, cholera and other infectious diseases are reemerging as significant public health problems. Although increased incidence is apparent, the extent and causes of the increase have not been adequately documented. Natural disasters, such as Hurricane Mitch, make an already bad situation worse, creating greater vulnerability to disease and mortality.

  Given the large deficit in rural water and sanitation systems in Guatemala, a majority of households face daily challenges related to water availability, excreta disposal and food handling. Mitch increased the vulnerability of many rural communities by further reducing access to clean water and sanitation. Drinking water availability and storage, sanitation and household hygiene are frequently among the most immediate needs of communities in the aftermath of most disasters. There is generally an increased level of fecal contamination of water and food supplies, leading to higher rates of acute diarrheal disease, including cholera. Endemic throughout Guatemala since the early to mid-1990s, cholera presents a special challenge in post-disaster situations because of its tendency to spread quickly and the need for prompt and proper medical care. On the positive side, locally managed programs to prevent and control acute diarrheal diseases such as cholera can successfully reduce the risks of morbidity and mortality.

Over the past several years, the Ministry of Health's capacity to control vector-borne diseases appears to have weakened, in part due to the process of decentralizing the design and management of public health interventions. The central level of the Ministry increasingly delegates authority for disease prevention and control to local health authorities who are not prepared to fully identify health risks or coordinate vector-borne disease control programs. Further complicating the diminished institutional capacity to control vector-borne diseases, is an increasing incidence of *P. falciparum* malaria as well as chloroquine resistant strains in selected regions of the country. Guatemala also appears to be facing an elevated risk of dengue epidemics, and many experts fear that dengue hemorrhagic fever is a growing and serious threat. Disasters usually cause the disruption of vector-control programs and the creation of new mosquito habitats, further elevating the risks of malaria and dengue transmission. Health risks due to both malaria and dengue could be substantially reduced through improved surveillance and community-based prevention and control programs.

In the past few years, immunization coverage levels in Guatemala for measles and other vaccine-preventable childhood illnesses have been increasing. However, in many parts of the country, coverage falls far short of the goal of 95% for children under one year of age. It is estimated that some 500,000 children under the age of five are unprotected from measles. Assistance to strengthening the national immunization program to achieve acceptable coverage levels for measles and other diseases is urgently needed. In post-disaster settings, especially if victims are moved into large shelters or malnutrition rates rise quickly, measles epidemics can become serious health threats.

One of the essential tools for strengthening Guatemala's capacity to reduce the health risks of vector-born illness, a functioning surveillance system for cholera and measles is in place. Health authorities at both the national and local levels should have access to epidemiological data and know how to use data to plan and effectively manage a public health response to minimize morbidity and mortality. Surveillance systems should contain early warning elements to identify the presence of elevated health risks, and health authorities must be trained to interpret and use the data to generate timely and appropriate responses to disease outbreaks. Recently, Guatemala has made some advances in strengthening its national epidemiological surveillance systems and in training a small number of epidemiologists. However, these efforts must be reinforced and expanded, especially at the local level, to generate a more responsive public health system. For example, local malaria control programs could be revitalized in high risk regions of the country by helping local authorities and selected communities strengthen surveillance and community-based prevention programs.

Three years ago, the Ministry of Health created a new service delivery model - the Integrated Health Care System (known as the *sistema integral de atención en salud,* or SIAS in Spanish). SIAS emphasizes the role of the community in disease prevention and control, creating an effective framework for promoting appropriate household hygiene practices and improved sanitation. However, the SIAS model is yet not fully operational, especially in remote rural communities. Technical assistance and training are required to

create the health education materials and methodologies needed to teach community members new behaviors to stem the spread of communicable diseases, including cholera, malaria and dengue.

The health component of this Special Mitch Objective supports the prevention and control of infectious diseases (cholera, malaria and dengue) in selected geographic regions of the country. The purpose of USAID's assistance is to strengthen the local disease response capacity, primarily by strengthening the local surveillance and promoting household health practices that inhibit disease transmission.

IR3 will focus on selected communities in the Departments of Escuintla, Izabal, Alta Verapaz, Zacapa, Chiquimula and the Ixcan region of northern Quiche. The primary focus of the malaria and cholera programs will be in rural areas, whereas the dengue component will help prepare mainly urban and peri-urban areas to confront an eventual epidemic.

The primary beneficiaries of the health activities financed under this Special Objective are children under five who are most vulnerable to the increased morbidity and mortality risks associated with natural disasters. The secondary beneficiaries include other family members in the targeted communities, especially mothers.

Indicators and Targets:

The following indicators will be used to measure the achievement of IR3 in a 24 month period. The targets that have been proposed for each indicator will be confirmed when the specific activities are designed and authorized.

- 75% of households in target communities consistently use insecticide-treated bednets to reduce malaria transmission
- 50% increase in the number of voluntary malaria collaborators who receive adequate supervision and support (as defined by updated Ministry norms)
- 35% increase in proper latrine use in target communities
- 35% improvement in an index of adequate household hygiene practices by mothers (such as hand washing, food handling, garbage disposal and household water treatment and storage)
- an emergency plan for dengue control developed and disseminated to local health authorities in high risk areas

IR3.1 Local Malaria Prevention and Control Programs Strengthened

The activities to be undertaken under IR3.1 will strengthen local epidemiological surveillance systems and expand community-based malaria prevention programs. Effective local malaria surveillance systems hinge in large part on the collection and analysis of blood smears to detect and type malaria parasites, begin presumptive treatment and return lab results to the community level as quickly as possible. Thus, the first key strategy is to strengthen surveillance through:

1. Refresher training courses for community collaborators (who take blood smears and begin presumptive treatment).
2. Improving the support and incentives provided to collaborators by reactivating the supervisory system. This could include more consistent slide collection, prompt laboratory analysis and return of results promptly to the community level.
3. Improved program management including continuous supply of slides, alcohol, etc.
4. Training for local MOH laboratory technicians to analyze blood smears (and to possibly provide new microscopes and limited supplies to selected local laboratories often situated in health centers). The existing MOH laboratory capacity will be upgraded through this activity.
5. Training local epidemiologists to analyze and use malaria surveillance data for decision-making about resource allocation, etc. One key feature of this training will be to conduct small field trials on chloroquine resistance and to monitor *P. falciparum* malaria.
6. Improving the quality of epidemiological information collected through the surveillance system (blood smears).
7. Improving the computerized data analysis systems used for surveillance and decision making purposes.

The second strategy for strengthening local malaria prevention programs will be to develop community-based prevention programs in at least three malarious zones (Ixcan, Izabal and the south coast). In many settings in Latin American and Africa, insecticide-treated bednets have become an effective source of protection from the night-biting *Anopheles* mosquito and bednet programs can be managed at the local level. Women's groups can be involved in bednet production and marketing; community health committees can manage the treatment process (storing insecticides, dipping and drying the nets); and volunteer health workers can promote proper use of bednets through education programs. CDC's Medical Research and Training Unit (MERTU) in Guatemala has already documented the efficacy of bednets in Guatemala and their acceptance by local populations. MERTU is prepared to introduce bednet demonstration projects in at least three health areas over the next two years. Bednets hold promise as a very inexpensive and effective way of reducing the transmission of malaria and may also be a source of income generation for local women's groups who could manufacture the bednets. The treated nets are deadly to mosquitos but do not affect people. Earlier research also helped determine the minimal amount of insecticide needed to be effective and appropriate hole size of netting to ensure protection from mosquitos with sufficient ventilation. This type of insecticides have been approved by the World Health Organization and the Environmental Protection Agency.

IR3.2 Household Water and Sanitation Programs Established in Selected Areas

The prevention and management of cholera and other diarrheal diseases will be the focal point of this lower level result. Cholera and most other acute diarrheal diseases require prevention on a variety of fronts including the treatment and storage of drinking water, safe disposal of human excreta, hand washing and the food handling. Interventions in each of these areas will be encouraged at the community level and may consist of education activities focusing on personal hygiene, household sanitation (including garbage disposal and fly control), water treatment and storage and latrine use. Construction and/or refurbishing pit latrines or dry composting latrines (where high water tables or small plots of land in semi-urban environments without sewage hookup may prevent the use of pit latrines) will also be undertaken. Water treatment could include education about the importance of boiling or filtering water and/or the distribution or marketing of water storage vessels and/or chemical disinfectants.

Household management of diarrheal diseases will also be addressed under this component. Community-level education and health worker training (including community health volunteers and MOH personnel at the health post and health center level) will teach proper household care of diarrheal diseases, including increased liquid intake, dietary management of diarrhea, identification of signs of dehydration and when to seek medical attention.

IR3.3 Capacity to Prevent and Control Infectious Diseases Enhanced

This result will focus primarily on two types of activities: (a) enhancing Guatemala's preparedness for a serious epidemic outbreak of dengue and dengue hemorrhagic fever and (b) strengthening epidemiologic surveillance systems. To increase Guatemala's preparedness to manage a serious dengue outbreak, assistance will be provided to the central level and selected high risk health areas to prepare an epidemic response plan. Such a plan could outline the detailed steps to be followed in response to confirmed or unconfirmed reports of a dengue outbreak. The plan would include how to mobilize communities to reduce mosquito breeding sites around homes and insecticide based interventions in homes. Besides identifying emergency response measures, the plan should identify the amounts and sources of commodities and spraying equipment needed and sources of emergency funds to implement such a plan. An important element of the emergency plan would be to enhance hospital preparedness to detect and promptly treat dengue hemorrhagic fever.

In order to improve infectious disease surveillance, CDC/MERTU will pilot test a program to increase the epidemiologic skills of selected health area staff. Distance education modules could be developed as well as seminars and university courses. Since fogging and aerial spraying insecticides have not proven efficient in the emergency control of dengue outbreaks, this component should also include testing the efficiency of alternative insecticide based measures to control mosquito populations. These efforts will be closely coordinated with other plans to improve epidemiologic capacities, including PAHO and CDC training programs.

V. Implementation Plan

A. Illustrative Approaches

IR1 USAID plans to coordinate efforts by NASA, NOAA, the USGS and other U.S. agencies to help INSIVUMEH with vulnerability mapping, data collection and restoration of damaged equipment. USAID will provide small grants through participating NGOs for disaster preparedness work with local committees following standard procurement procedures. Finally, USAID plans to work closely with OFDA and other donors to coordinate assistance to CONRED.

IR2 USAID PL480 Title II Private Voluntary Organizations (PVOs) partners (CARE and CRS) were already working in the areas hard hit by the Hurricane and were able to redirect their in-stock food resources and manage the distribution of OFDA emergency resources. They also received $.5 million in OFDA funds each for Hurricane Mitch relief efforts. They now stand ready to participate in any agricultural recovery effort and have close working relationships with the Ministry of Agriculture (MAGA). USAID also has existing relationships with the Cooperative Housing Foundation (CHF) in the Ixcan and the National Coffee Association (ANACAFE) in coffee producing areas affected by Mitch. USAID proposes to amend existing cooperative agreements with CARE, CRS, CHF, and ANACAFE to implement Mitch SpO activities. Support to MAGA and BANRURAL will be provided through SOAG and PIL mechanisms.

IR3 Two mechanisms will be used to implement IR3 activities. The Centers for Disease Control (CDC) operates the Medical Research and Training Unit (MERTU) in Guatemala. MERTU has an established capacity to strengthen local malaria control programs, including surveillance and community prevention (IR3.1) and distribute and promote the use of drinking water storage vessels (IR3.2). CDC/MERTU will also provide limited technical assistance to enhance the MOH's capacity to prevent and control epidemic diseases through epidemiology training programs and the preparation of a dengue emergency plan (IR3.3). USAID/G-CAP will transfer the funds through a MAARD to the Global Bureau as incremental funding to an interagency agreement with CDC for infectious disease programs.

USAID will also award up to three Grants/Cooperative Agreements or amendments to existing Cooperative Agreements with U.S. PVOs to carry out the household water and sanitation programs (IR3.2).

We are developing a detailed procurement plan that includes pre-implementation activities such as unfunded MAARD, and a short fuse to accelerate implementation.

Illustrative time table follows:

Implementation Timeline

April 29	Submission of Guatemala Mitch SpO for LAC Approval
April 30	Submission of draft Congressional Notification

May 3	USAID Begins Detailed implementation planning
May 5	Guatemala Mitch SpO Approved and CN forwarded to Hill
May 6	GOG Foreign Minister and Planning Secretary host donor discussion on Mitch coordination
May 7	Supplemental Approved (planning assumption)
May 12-13	OFDA scoping visit to Guatemala
May 17	USACE/USDA/USGS scoping visit to Guatemala
May 20	CN expires without objection, and Unfunded MAARDs for extension sent to RCO
May 21	ESF Apportionment Requested
May 30	ESF funds apportioned by OMB and budget allowances forwarded to USAID Missions
June 4	Mitch SpO Agreement signed with GOG
June-July	Subobligations/Awards/Contracts/Transfers Completed Some early implementation will begin during this period
January 2000	SpO Portfolio Review
January 2001	SpO Portfolio Review
April 2001	Implementation completed

B. **Monitoring and Evaluation**

Within three months of SpO obligation, USAID will complete a performance monitoring plan (PMP). The PMP will describe: the performance indicators, unit of measurement, data source, method/approach of data collection, a collection schedule, and party responsible for data collection and analysis. A portfolio review is planned one year following the initial obligation to assess progress against indicator targets, to ensure activities are on track, and to make adjustments for the remainder of the program. This review will involve USAID, development partners, other USG agencies, and Guatemalan government and nongovernmental agencies as appropriate. A final evaluation, either specific to Guatemala Mitch assistance or as part of a LAC regional Mitch impact evaluation will be undertaken at the end of the two year effort.

C. **Audit**

USAID/G-CAP will ensure a high level of financial accountability for all funds provided to it under the supplemental. One consideration for determining implementation mechanisms will be ability to provide proper stewardship of USG funds. In this vein,

USAID/G-CAP will work principally with known partners, both U.S. and non-U.S. Non-U.S. partners will include those with whom USAID/G-CAP has already worked to develop sound financial/administrative systems through the on-going Peace Program (e.g., CIPREDA, FONAPAZ). For U.S. partners, USAID/G-CAP will consider the need to perform local audits or financial reviews, depending on the level of vulnerability USAID/G-CAP perceives.

As part of its audit plan, USAID/G-CAP will employ concurrent audits, start up audits, limited scope audits, USAID/G-CAP financial reviews, audits performed by the Guatemalan Government's Contralor de Cuentas who was "certified" by USAID/RIG/ES last year, and audits/financial reviews contracted by USAID/G-CAP under its two audit IQCs, local coverage under A-133 audits of U.S. partners and the regular Recipient Contract Audit Program for non-U.S. partners. Along these lines, USAID/G-CAP has already had preliminary discussions with RIG/ES and will work closely with RIG/ES when/if it performs a risk assessment of the supplemental and when/if RIG/ES supervises some of the audit functions. Besides including audit costs in the various sub-agreements, USAID/G-CAP's SpO Agreement with the GOG will include separate funding for audit work to ensure quick access to funds when an audit need is perceived.

VI. Environmental Compliance

An Initial Environmental Examination (IEE) will be prepared during May 1999 for submission to the LAC Bureau Environmental Officer. The IEE will constitute a detailed analysis of the environmental status of each of the proposed activities under the Special Objective and will have corresponding environmental review recommendations. It is anticipated that the majority of activities will quality for categorical exclusion (microenterprise credit, training, information transfer, etc.) or will be covered by existing approved Environmental Evaluations (approved PEAs for on-farm activities, agroforestry, reforestation, etc.) given that existing ongoing grant instruments with CARE, CRS, CHF, and ANACAFE will be amended to include special Mitch activities. USAID/G-CAP recommends that for activities that are still not clearly defined and which may not qualify for a categorical exclusion, a covenant be included in the SpO Agreement (SpOAG) to stipulate that no funds will be disbursed for activities requiring such reviews prior to conducting an environmental review, subject to approval by USAID/G-CAP.

For example, the Ministry of Agriculture (MAGA) is requesting that Special Objective funds be provided to install gabions (rock filled wire cages) along the Motagua River to protect irrigated land or villages from any high water that may come from future catastrophic rains such as Mitch. The Motagua and its tributaries have changed course and taken on a new dynamic in relation to the people that live along side it. MAGA views these structures as essential to protect agricultural land and homes (which cannot be easily replaced) and wants to minimize their effect on the river. It is not intended to use them to protect infrastructure, such as approaches to bridges, which would be better off left unprotected and repaired after disasters occur.

A positive environmental determination for any gabion work is anticipated given they will have down stream effects on sedimentation and erosion. The length and height of the gabion, the

distance from the river, and their angle to the river flow will influence the degree of down stream impacts. Rock extraction to fill the gabions will also have a positive environmental impact effect on the river. At a minimum, the environmental threshold decision will require language included in the Mitch SpOAG that for each proposed gabion site before construction will begin, MAGA submit for Mission Environmental Officer approval a description of the site, a description of what the gabion will protect, a map of the location of the gabion (length, distance from river, angle to river flow, and rock extraction site), an analysis of downstream erosion and sedimentation effects, and description of any possible mitigation measures that can be taken.

USAID/Guatemala is also in the process of contracting technical assistance, possibly from the Army Corps of Engineers, to review the proposed gabion plans of MAGA and to develop best practices for gabion construction that minimize environmental impacts that MAGA would agree to adopt. A check list could also be developed to be applied for each proposed gabion site to ensure that gabions adhere to certain site selection criteria and don't exceed a certain length or angle to river.

For other Motagua river management activities, USAID will enter into an agreement with the Army Corps of Engineers to develop a Motagua River Basin Reconstruction Plan. Such a plan will include a thorough evaluation and documentation of the potential environmental effects associated with the alternatives considered and the recommended solutions.

USAID/Guatemala will continue its analysis of insecticide-treated mosquito bednets, deferring a decision on the need for further environmental action pending further review. No funds will be disbursed for the bednet activities until action plans have been reviewed and approved by the LAC Environmental Officer. While the use of the pyrethroid compounds considered for use (cyfluthrin, permethrin, deltamethrin or others) will be utilized as recommended by EPA-approved labels and according to international standards, it is unlikely that any adverse environmental effects will occur. However, it is necessary that a specific plan be elaborated which will identify how the insecticides will be handled from "cradle to grave," particularly as to how the pesticide safe use message will be incorporated into the community mobilization/training activities. Safe insecticide management equipment and facilities may need to be incorporated into SpO implementation. Implications for implementation actions need to be considered for all concerned parties, particularly Ministry of Health staff, NGOs, and the end users themselves.

In general, smaller water supply and sanitation projects such as those which will be built or rebuilt under this SpO are not expected to have a significant impact on the environment and will include appropriate environmental mitigation measures in the design. An environmental impact analysis performed in conjunction with the just complete Highlands Water and Sanitation concluded that environmental impacts of this type of activity may include: 1) reduction of the natural flow of water into the superficial aquifer, due to the capture of springs, and resulting ecological changes, as the water table drops to a new equilibrium; 2) changes in stability of the soil due to construction erosion and effects of clearing the vegetation; and 3) erosion may occur during operations if there is overflow at pipe areas and standpipes. However, these negative

environmental impacts will be minimized or eliminated by making appropriate modifications in project design.

Water source contamination due to pesticide use and other contaminates and watershed deforestation would have deleterious effects on water quality as well as quantity. While these environmental changes may be a result of other activities, they could hinder project effectiveness. The SpO will incorporate environmental monitoring and educational messages into project activities in order to address these concerns.